



**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY**  
**NATIONAL VEHICLE AND FUEL EMISSIONS LABORATORY**  
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**ANN ARBOR, MICHIGAN 48105-2498**

OFFICE OF  
AIR AND RADIATION

March 5, 2018

CD-18-03 (LD)

**Subject: Update to Advisory Circular (A/C) 50A**

Dear Manufacturer:

The purpose of this letter is advise you that EPA is updating Advisory Circular (A/C) 50A which was issued on December 16, 1976 ([A/C 50A](#)). Engine control and engine fuel system technology have changed since 1976, and as such, the hot soak provisions in this A/C are no longer necessary. Furthermore, vehicles may not require extra preconditioning cycles due to advances in adaptive memory in the fuel control system over the last 42 years.

The existing Advisory Circular A/C 50A reads as follows:

E. Unusual Circumstances Requiring Additional Preconditioning

1. Vehicles in storage without operation (after receipt at EPA) for more than 5 days may require additional preconditioning to ensure their representativeness. Therefore, each vehicle stored more than 120 consecutive hours (5 days) without any preconditioning operation will receive an additional preconditioning cycle consisting of a minimum one-hour hot soak and one UDDS unless the manufacturer requests that the vehicle not receive additional preconditioning.

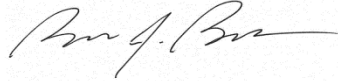
EPA is superseding that paragraph with new language which read as follows:

E. Unusual Circumstances Requiring Additional Preconditioning

1. Vehicles in storage without operation (after receipt at EPA) for more than 5 days may require additional preconditioning to ensure their representativeness. Therefore, each vehicle stored more than 120 consecutive hours (5 days) without any preconditioning operation may receive, at the manufacturer's request or by EPA discretion, an additional preconditioning cycle consisting of one UDDS.

Enclosed is the full A/C 50A with the updated paragraph E.1. The rest of guidance outlined in A/C 50A remains in effect. If you have any questions regarding this change, please contact your certification representative.

Sincerely,

A handwritten signature in black ink, appearing to read "Byron J. Bunker", written over a light gray rectangular background.

Byron J. Bunker, Director  
Compliance Division  
Office of Transportation and Air Quality

Enclosure

**Enclosure to CD-18-03**  
**Revised Advisor Circular A/C 50A**

**A. Purpose**

The purpose of this Advisory Circular is to outline under what general circumstances additional test vehicle preconditioning may be granted or required by EPA. This Advisory Circular supersedes Advisory Circular No. 50 for 1978 and later model year vehicles. Advisory Circular No. 50 continues to apply for 1976 and 1977 model year vehicles.

**B. Background**

1. Advisory Circular No. 50 published on October 7, 1975 outlined preconditioning test procedures for vehicles to be tested for exhaust emission only different from those for vehicles to be tested for both exhaust and evaporative emissions. In addition, Advisory Circular No. 50 provided for additional preconditioning for vehicles which encountered unusual circumstances in shipment to EPA or were stored outside at EPA for extended periods of time prior to testing.
2. On August 23, 1976, EPA promulgated regulations (40 CFR §86.101 et seq., 41 FR 35627) which specified the test procedures for exhaust and evaporative emissions for 1978 and later model year light-duty vehicles and light-duty trucks. These regulations specify preconditioning procedures for test vehicles and provide in unusual but unspecified circumstances, for attrition preconditioning if granted or required by EPA. (see §86.132-78) These regulations however, do not provide preconditioning procedures for vehicles being tested only for exhaust emissions different from those for vehicles being tested for both exhaust and evaporative emissions.
3. Manufacturers have asked for EPA's criteria for determining what "unusual circumstances" justify granting a manufacturer's request for additional preconditioning and how many additional cycles would be granted. Manufacturers have also asked under what circumstances EPA might require additional preconditioning to assure stabilization of the evaporative emission control system.
4. The intent of the new regulations (August 23, 1976) is to ensure that the evaporative emission control systems are designed to function effectively in-use. Even in a situation where the canister is saturated (for whatever reason), an evaporative emission control system should be designed to purge sufficiently during typical urban driving so that it can hold the evaporative emissions from one hot soak and one diurnal.
5. It is EPA's view that a properly designed evaporative emission control system should, under most circumstances, be adequately stabilized by the single required urban dynamometer driving schedule (UDDS) preconditioning cycle. Furthermore, it is the EPA's view that manufacturers should deliver their vehicles to EPA test facilities in a manner and condition such that the vehicles are representative of typical operation and should only require the single UDDS preconditioning cycle to assure adequate stabilization prior to being tested. Manufacturers who fly their vehicles to Detroit Metropolitan Airport, and then truck the vehicle to the EPA lab, have the option of driving the vehicles on local Ann Arbor streets before formally delivering them to EPA for testing (as provided in Advisory Circular No. 23). Therefore, preconditioning in addition to this single UDDS cycle will only be granted or required under unusual circumstances occurring after vehicles are delivered to EPA.
6. Because consideration of request from manufacturers for additional preconditioning will be limited to those "unusual circumstances" which occur after the vehicle is received at EPA and prior to the time the test sequence is initiated, EPA has instituted vehicle

handling procedures which minimize the occurrence of an “unusual circumstances” and thereby minimize the need for additional preconditioning.

### C. Applicability

This Advisory Circular is applicable to all 1978 and later model year gasoline-fueled light-duty vehicles and light-duty trucks and Diesel light-duty vehicles and light-duty trucks. Advisory Circular No. 50 continues to apply for 1976 and 1977 model year vehicles.

### D. Delivery of Vehicles to EPA

1. It is the manufacturer's responsibility to deliver his test vehicles to EPA by such procedures that the vehicle and its exhaust and evaporative emission control systems are representative of typical operation and are capable of being adequately stabilized by a single UDDS pre-conditioning cycle.
2. Manufacturers are cautioned against disconnecting or removing emission control hardware during shipment. Because 40 CFR §86.078-26 requires that vehicles accumulate mileage with “all emission control systems installed and operating,” such alteration of the vehicle may render it unrepresentative and subject to disqualification.
3. Prior to testing, removal of evaporative emission control system components (including purge lines) for the purpose of limiting any interaction between ambient conditions and exhaust of evaporative emission control systems during storage at EPA will not be permitted.
4. Requests for additional preconditioning will not be granted on the basis of the condition in which the vehicle was received by EPA.

### E. Unusual Circumstances Requiring Additional Preconditioning

1. Vehicles in storage without operation (after receipt at EPA) for more than 5 days may require additional precondition to ensure their representativeness. Therefore, each vehicle stored more than 120 consecutive hours (5 days) without any preconditioning operation may receive, at the manufacturer’s request or by EPA discretion, an additional preconditioning cycle consisting of one UDDS.
2. In circumstances where there is reason to believe that a test vehicle is delivered to EPA in an unstabilized condition which is likely to cause exhaust or evaporative emission test results to underestimate the vehicle’s true emissions (e.g., and abnormally purged canister), EPA will require additional preconditioning. The number of additional preconditioning cycles required in such cases will be determined on an individual basis for each vehicle and circumstance.

### F. Preconditioning for Testing at the Manufacturer’s Facility

1. EPA realizes that at zero-miles, manufacturers may have concerns that the single UDDS preconditioning cycle may not provide sufficient vehicle operation to produce representative emission results on a vehicle which has had little or no prior operation. Consistent with practice instituted in the 1976 certification program, EPA has concluded that it is appropriate to authorize, on an optional basis, up to three UDDS cycles, each separated by a one-hour hot soak, in addition to the UDDS precondition cycle prior to the zero-mile emission test. Manufacturers need not request prior approval for conducting this additional preconditioning, but should note the number of UDDS cycles conducted on their vehicle log sheet.

2. Requests for additional preconditioning for testing at the manufacturer's facility at any test point other than zero miles will be considered on an individual basis. The criteria EPA will use then considering such requests are outlined in paragraphs D. and E. of this Advisory Circular.